

THE LOUISIANA DISASTER
RECOVERY FOUNDATION

PRESENTS:

GREENOLA: A STRATEGY
FOR A SUSTAINABLE NEW
ORLEANS

A RESOURCE FOR NEIGHBORHOODS &
RESIDENTS TO ENGAGE IN THE MASTER
PLANNING PROCESS AND ENSURE
SUSTAINABLE REDEVELOPMENT



**LOUISIANA DISASTER
RECOVERY FOUNDATION**

Louisiana's Fund for Louisiana's People



GreenNOLA

A Strategy for a Sustainable New Orleans



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Executive Summary

The City of New Orleans is establishing a comprehensive approach to its recovery by incorporating leading ideas about sustainable and smart urban development into the recovery process. We are, in fact, rebuilding both the city's physical infrastructure and its administrative infrastructure. Our objective is not merely to recover, but to recover smarter, greener, and better than we were before.

In New Orleans, sustainable development means establishing resilient settlement patterns based on a thorough understanding of flood risk; adopting better building standards that include energy efficiency, design for climate change, and alternative energy sources; finding more

effective uses for materials that are currently being discarded as waste; and protecting and restoring the urban and natural environments.

The City has taken the initial steps by becoming a national Solar America City, by adopting Energy Smart New Orleans principals, and by developing this Greening of New Orleans sustainability action plan (GreeNOLA), which is the City's roadmap for making New Orleans sustainable as it rebuilds. The GreeNOLA action plan consists of three major steps:

STEP 1. Revive environmental programs and policies that were lost as a result of Hurricane Katrina, including environmental conservation practices

within City Hall, the green council, and a green building ordinance.

STEP 2. Reorganize city government so that it can more effectively implement new initiatives related to energy, development, and environment. Establish an Energy Office, a Disaster Mitigation Office, and expand the existing Environmental Affairs Office. Create a Consortium of Gulf Coast Mayors to collectively address regional issues along America's Gulf Coast. Establish a Green Team to recommend sustainable green building practices for ongoing recovery projects as they are being implemented.

STEP 3. Establish specific, measurable, and attainable

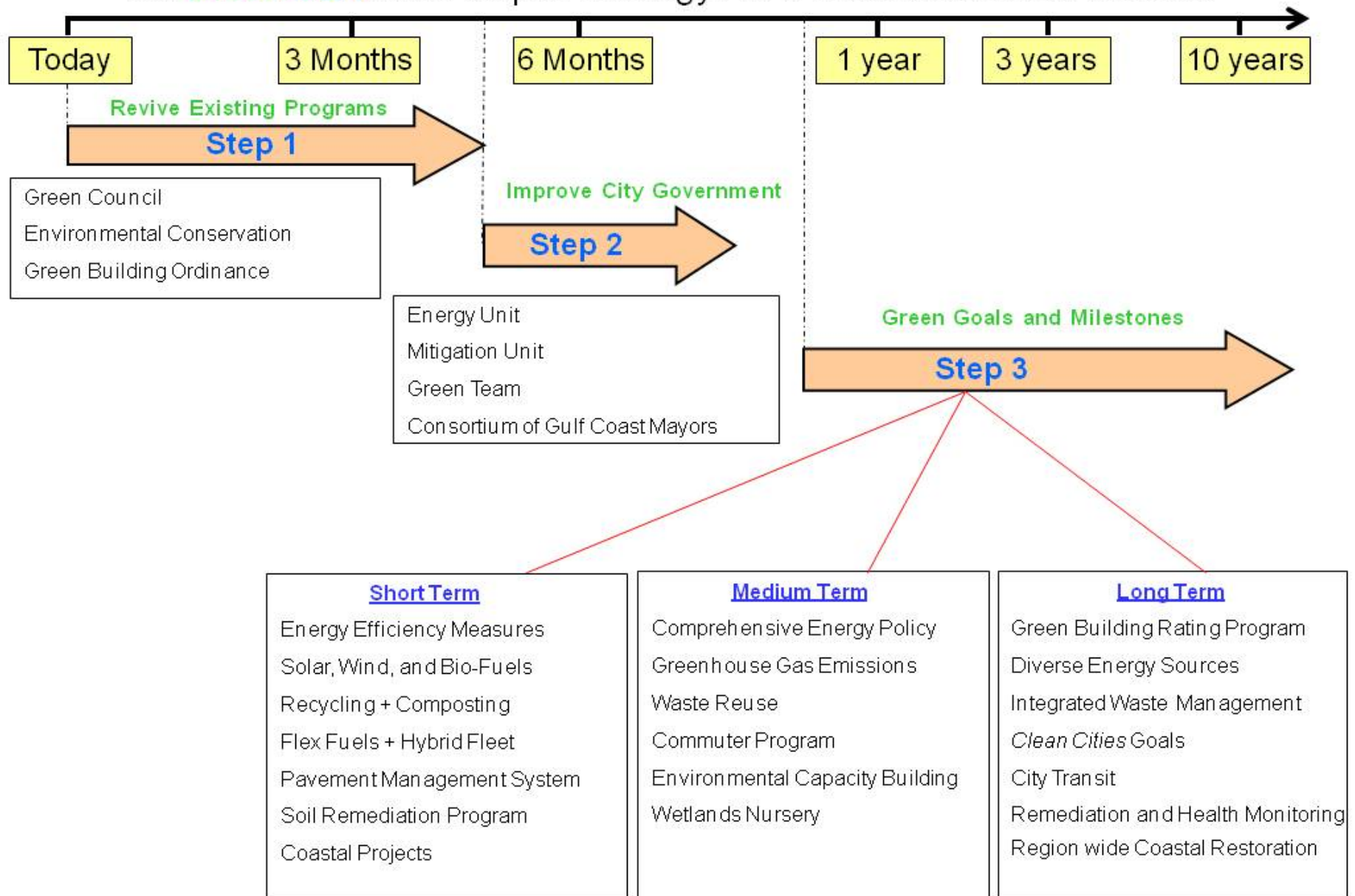
sustainability goals to be achieved within the following timelines:

Short-term = 1 year
Medium-term = 3 years
Long-term = 10 years

What follows is a roadmap for identifying and achieving sustainability goals in six broad program areas:

1. **Green Buildings & Energy Efficiency**
2. **Alternative Energy**
3. **Waste Reduction, Reuse, & Recycling**
4. **Transportation & Clean Fuels**
5. **Environmental Outreach & Justice**
6. **Flood Risk Reduction**

The GreenNOLA Road Map: A Strategy For a Sustainable New Orleans



Residential

INTRODUCTION

Residential buildings are one of the largest users of energy in the country. Increasing the energy efficiency of buildings helps make housing more affordable by decreasing energy bills and operating costs for the house. Because New Orleans has to rebuild almost 80% of its residential housing stock, the ongoing rebuilding process offers an opportunity to rapidly turn New Orleans into one of the greenest cities in the country. Incentives for landlords are important as New Orleans as a high percentage of homes which are rented.

Lessons Learned

While other cities have had green programs for

years, New Orleans can quickly “green” its housing stock by creating a standard and taking advantage of existing and proposed programs and incentives.

Other cities around the US have created green building programs for residential buildings. While all of such programs are voluntary, cities, developers, and residents have all come to realize the economic and quality-of-life benefits of building with energy efficient and environmental considerations in mind.

Cost/Benefit

It is necessary to analyze all of the proposed measure and examining the cost and benefit of each measure. Many of the costs for making residential units more energy efficient are

“up-front” costs that reap savings over the life of the house. While the benefits almost always outweigh the costs in the long-run, one of the city’s goals should be to assist New Orleanians, especially poorer citizens, to overcome the initial cost associated with greening houses so that they may enjoy the affordability that energy efficiency imparts.

Residential and Commercial Buildings use 39% of the total energy consumed in the United States.

Indicators

To measure the success of implementing the following residential green building policies, an appropriate indicator is required. Examples of

indicators are:

- Energy use per square foot
- Cost of energy conservation per square foot
- Savings on energy bills
- Adoption rate of solar and other renewable technologies

Short-term goals should reduce energy bills by taking advantage of existing incentives and weatherization programs.

Target Area & NORA Green Projects

Green incentive packages and green standards should be implemented in certain Target Areas identified by ORDA and NORA. Current work is being done by Clinton Climate Initiative to introduce green standards to NORA’s RFP’s for adjudicated property

Green Buildings & Energy Efficiency

development.

Identify Barriers in Code and Zoning

The technical assistance from the Solar Cities grant from the DOE as well as the assistance from MIT and other experts will identify roadblocks and impediments to adoption of energy efficiency housing.

Louisiana Senate Bill 90

SB 90 provides for 50% tax credit for up to \$25,000 of solar energy and thermal systems. The City needs to ensure that an Interconnection Agreement is in effect between Safety and Permits and Entergy.

Weatherization

Weatherization grants are available from the US Department of Energy and elsewhere to increase the efficiency of a house

and lower energy bills for residents. The City could partner with Entergy and local partners to create a weatherization program.

Within the next three years, New Orleans should expand existing incentives for green building, adopt a green building standard, build City capacity for green residences, and begin training a “Green Collar” workforce in order to lay the groundwork for wide scale adoption of green residential buildings.

Green Residential Standard

Chicago, Toronto, Seattle, and other North American cities have crafted and adopted housing certification standards with attendant incentive packages. The relative merits of each green

standard for residential buildings needs to be compared, and the most appropriate chosen for New Orleans. This could be a new standard based on similar cities, or could be a combination of existing measures.

Green Financing

Prior to Katrina, several New Orleans banks offered Green/Energy Efficient Mortgages, which should be expanded and packaged with other incentives. The city should consider green lending programs.

Incorporating programs that assist home owners in gap financing for their energy efficient retrofits can serve to alleviate the difficulties with up front cost of going green.

Green Collar Job Training Program

The City will incorporate

energy raters in Safety and Permits, employ LEED or other certified professionals in appropriate city agencies, and provide job training through JOB1 for electricians, plumbers, and contractors.

Barriers in code, regulation, and zoning should be eliminated, green standards should become mandatory, and a full spectrum of incentives for green residential building should be implemented.

Building Code

The city shall develop voluntary, New Orleans-specific green standards and goals for sustainable residential construction. New Orleans should develop and adopt a building code that meets specific standards, and provides incentives for reaching high-performance

Green Buildings & Energy Efficiency

thresholds.

Zoning and Master Plan to include Density Bonuses and TDRs

New Orleans zoning should be updated to include density bonuses and transferable development rights for those developers including green and energy-efficiency considerations in their projects.



Figure 1 Architect and planner Steven Binger's home in Carrollton is the first private LEED-certified residence in the country. [Source: katrinaevacuee200 from Flickr.com]

BEST PRACTICES

Portland

Low income weatherization program (750 homes)
Sliding scale fees and rebates for permitting

Houston

Weatherization of inner-city homes by utility (CenterPoint Energy)

Seattle

BuiltGreen certification

Chicago

The Chicago Standard (construction standard)
Green Permit Program (DCAP)

Austin

All new homes zero-net-energy by 2015

Atlanta

Earth Craft House program is offered in the city of Atlanta. Coupled with grants to green program.



Figure 2

The Factor-10 House, designed by EHDD, was constructed through Chicago's Green Homes for Chicago competition, funded through a settlement with Chicago's energy utility. The house has an ecological footprint 1/10 of the average US house. [Source: michellemarie from Flickr.com]

EXISTING NEW ORLEANS PROJECTS

Solar Cities

The City of New Orleans is one of 25 recipients for a Solar

Cities grant from the Department of Energy

Global Green

In the Holy Cross neighborhood, Global Green is building a green residential development, and Holy Cross has committed to being carbon-neutral by 2020.

Build it Back Green

Program is currently offered to low income home owners and Road Home money recipients.

Low Income Weatherization Assistance Program

Total Community Action is weatherizing 70 Homes

Build Smart Weatherization Program

Green Buildings & Energy Efficiency

Alliance for
Affordable Energy

Louisiana Housing
Finance Authority
LEED points awarded
for energy efficient
installations on
renter occupied
homes

Energy Savings
Initiative
Preparing a Building
Code Analysis for
the City of New
Orleans.

Department of Energy
Technical Analysis of
the New Orleans
building code under
an existing program

Green Mortgages
JPMorgan Chase and
others offer a
mortgage in this
category

Green Insurance
Fireman's Fund
Insurance Company
has introduced

Certified Green
Building
Replacement and
Green Upgrade
coverage. This new
coverage is
specifically for green
commercial buildings
that address the
unique risks that are
acquired with
sustainable building
practices.

Commercial



INTRODUCTION

Commercial buildings are one of the largest users of energy in the country. Commercial green building faces similar impediments to that of rental housing; unless the tenant also owns the building, there is no incentive for the building owner to decrease operating costs or improve the working environment of

the structure.

The City of New Orleans should work to promote green building and energy efficient practices in existing and future commercial buildings.

The state recently adopted ASHRAE 90.1-2004 code for all commercial buildings in Louisiana, except for low-rise residential buildings. Low-rise residential structures must conform to the International Energy Conservation Code 2006 (IECC-2006). Both are progressive codes and are the latest available for energy efficiency considerations.

Portland's G/Rated program is one of the most comprehensive programs in the country, meant to

Green Buildings & Energy Efficiency

accelerate the adoption and cost-competitiveness of commercial and other green building. Chicago's fast-track Green Permit Program pays for energy ratings/consultant reviews on qualifying commercial buildings and approves permitting within 30 business days or less.

LESSONS LEARNED

Commercial green building programs can be difficult to incentivize by city government. Instead, the city should focus on a limited incentive program while encouraging the creation of an energy trust and other non-budgetary means of incentivizing commercial green building.

Cost/Benefit

According to a December 2006 Department of Energy/Pacific Northwest National Laboratory study, commercial office buildings will enjoy an 8-13% reduction in energy use per square foot as a result of the newly-adopted 90.1-2004 code.

Additionally, the analysis expects that encouraging the adoption of a LEED standard for commercial buildings will reduce energy costs by up to 19% per square foot. Lastly, the study shows that office building efficiency is easiest to improve, and that even some of the most expensive measures to increase energy efficiency of lighting and windows in commercial buildings have a simple payback

of less than four years.

Meet new building code standards and take advantage of immediate opportunities.

Commercial Green Building in Target Areas

The Office of Recovery Management Target Areas should encourage commercial and mixed use green buildings.

Green Commercial Building Council

Part of a larger green business initiative with large developers and institutions.

Create a Green Commercial Properties Program

Work with large commercial building owners and institutions such as local universities and hospitals to increase energy savings of commercial and institutional buildings.

Implement energy saving measures:

- CFL light bulbs
- Occupancy sensors
- Power consumption sensors
- Education of office workers
- External solar shading
- Building envelope
- Efficient and appropriately sized air-conditioning systems

Firmly establish green commercial programs and incentives, expanding off opportunities and successes created in the short-term.

Commercial Building Standards

The city shall develop voluntary, New Orleans-specific green standards and goals for sustainable commercial construction. Establish a commercial green

Green Buildings & Energy Efficiency

building standard that meets ASHRAE 130.1 for small offices or LEED-NC, such as Portland's G/Rating.

Commercial Green Building Incentives

Incentives should be created for commercial green buildings.

- Tax credit for buildings that meet specific targets
- Increased FAR and other density bonuses
- Expedited permitting

Green Financing

Work with local financial institutions to create a package of green financing for businesses willing to build or renovate according to green building practices

- Green commercial loans
- Green commercial insurance

All commercial buildings in the city will be

constructed according to a green standard. The city will pass a green commercial building code.

Green Commercial Building Code

Require all commercial buildings to be LEED-certified or meet ASHRAE 130.1.

EXISTING NEW ORLEANS PROJECTS

ArtEgg

The Alliance for Affordable Energy and other organizations have installed solar panels on the roof of the former American Beauty butter warehouse on Earheart. The building is now used as art studios and for the Alliance's activities.

Global Green

Holy Cross mixed-use commercial residential green building project.

iciNOLA

A Bywater mixed-use green commercial-residential project.

Make it Right

150 homes to be built in the Lower 9th Ward of New Orleans. All will be built to LEED Platinum standards.

NOLA 100

44 homes were weatherized and energy rated out of a possible 100 with assistance from several non-profit groups. The research on savings was calculated.



Figure 3. Hearst Tower in New York is one of the first LEED Gold-certified office towers in the country. Greener buildings are more energy efficient, more productive work

environments, and are less harmful to the environment.



Figure 4. Smaller commercial buildings and offices benefit greatly from design for energy efficiency and the environment. Such considerations immediately impact the bottom line. Pictured here are the Genzyme Center in Cambridge, MA, and the Corbett Garage in Portland, OR.

BEST PRACTICES

New York

Local Law 86 mandates green commercial building NY 's State Energy Research and Development Authority provides services for green building:

- Computer modeling
- Eco-design charrettes
- Tax credit assistance
- Commissioning
- Lifecycle costing

Arizona

The Community Bank of Arizona has a green building commercial loan available for those commercial structures that attain an Energy Star rating of 75 or better.

Portland

The Oregon Energy Trust was created in 1999 by a mandate from the Oregon Public Utilities Commission that the investor-owned utilities in the state collect a 3% public purpose charge. The charge finances incentives for energy efficiency, green building, and renewable energy measures, and

is an effective means at incentivizing commercial green building.

Chicago

Chicago incentivizes green building through Green Permitting Program, with approval in less than 30 business days. The Chicago Center for Green Technology is a LEED-Platinum building meant to be both a model municipal building as well as an exemplar of green commercial building.

ASHRAE standards can improve commercial buildings and small offices by 30% to 40% with off-the-shelf technologies.

Municipal Facilities and Operations

INTRODUCTION

The facilities and properties owned and operated by City of New Orleans are one of the largest users of electricity in New Orleans. The City has the ability to dramatically impact how its facilities in the city use energy and should lead by example. According to the 1998 Green House Gas (GHG) analysis of municipal departments, municipal buildings in NO produced 32% of the total municipal emissions.

US cities that are widely known for their environmental policies

all have some municipal buildings which a low environmental impact.

The green roof on Chicago's City Hall is a practical benefit to the city's bottom line as well as a symbol of the Chicago's commitment to a greener future. The \$2.5M roof was funded by a settlement with ComEdison, the local utility.

LESSONS LEARNED

New Orleans Local Government has the opportunity and the obligation to become greener in its operations.

According to the City's 1998 Greenhouse Gas (GHG) study, the Sewerage and Water Board (S&W B) contributes to approximately 60% of the city's GHG emissions. Working cooperatively with the

Green Buildings & Energy Efficiency

S&W B to reduce or offset emissions will dramatically reduce the city's GHG footprint.

Costs and Benefits

Many of the energy-saving and environmental measures here considered will pay for themselves within a decade, and projects often have benefits (such as visibility and productivity) that are difficult to quantify.

Indicators

To measure the success of implementing the following policies, an appropriate indicator is required.

Examples of indicators are:

- Energy use per square foot
- Cost of energy conservation per square foot

Short-term goals are immediately and visibly

impact, taking advantage of 'low-hanging fruit.'

Green Rebuilding

The city shall develop voluntary, New Orleans-specific green standards and goals for sustainable municipal construction. In the meantime, the City will establish a "Green Team" to recommend immediate green building improvements to the project worksheets of ongoing recovery projects.

Green Procurement

All City of New Orleans departments should go through a green procurement review process in order to identify opportunities to "green" municipal facilities and operations. Specifically, the Mayoral team that comprises the green team will need to convene at least once a

month to look into the city purchasing processes.

New Orleans Standard

New Orleans should develop specific standards for Municipal Buildings so that the local government can lead by example. Greenhouse gas (GHG) emissions due to the operation of municipal buildings in NO were 32% of the total municipal emissions.

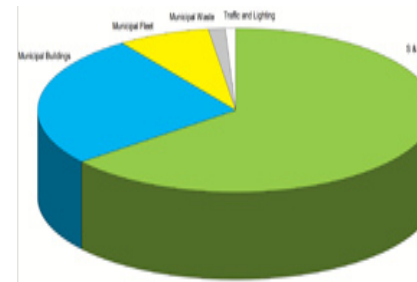


Figure 5

Almost two-thirds of the City of New Orleans' municipal greenhouse gas emissions are generated by the Sewerage and Water Board. The efficiency of S & WB operations can be increased

and the carbon footprint decreased by implementing cogeneration facilities at wastewater and water treatment plants.

Municipal Building Standard

New Orleans should follow other municipalities in committing to a LEED Silver-level for all new municipal buildings.

Center for Building Technology Excellence

Create a Center for Building Technology Excellence, in partnership with the Regional Planning Commission. The CBTE should conduct state-of-the-art research on building technologies for hot-and-humid coastal climates and showcase building materials and techniques for the region. The building itself should be a LEED Platinum-quality building, and modeled

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after Chicago's Center for Green Technology.

Sewerage & Water Board

The S&WB should plan for cogeneration facilities and other upgrades which will improve S&WB efficiency.

The City of New Orleans should increase its use of renewable energy sources in municipal buildings, and all municipal buildings and operations should operate at a high level of energy efficiency. The City should also look into ways to improve its storm drainage sedimentation policies. Reduction in sedimentation will decrease pollutant run off and increase potable water

The City should incorporate laws that are more amenable to

rain water and gray water cistern usage. Current laws restrict its use and continue to increase unnecessary water loads on municipal water supply.

GHG Reduction

The City of New Orleans should commit to reducing its energy footprint by meeting several ambitious goals. Such goals can include:

- Reduce greenhouse gas emissions by 30% by 2020 from a 2005 baseline.
- Commit to reducing consumption of electricity and natural gas by 1%/year.
- Renewable energy purchase agreements for municipal operations-energy.

The City of New Orleans' partnership with ICLEI should be used to create more feasible plans for

carbon reduction.

Carbon-Offsetting

The City should look to offset its carbon footprint by planting trees, building green roofs on applicable city facilities.

Cost-Benefit

Within 10 years, undertake all activities with 10-year payback on municipal facilities.



Figure 6

Chicago City Hall's renowned green roof. The roof reduces heating and cooling costs and retains stormwater. It is also a symbol of the city's commitment to being one of the greenest in the world.

EXISTING LOCAL PROJECTS

- Recycling of asphalt, concrete and gravel from streets.
- LED lights in 100% of City-owned Buildings

BEST PRACTICES

Portland

Invest in all energy-efficiency measures with 10-year or less paybacks. Adopt energy efficient standards for all new city buildings and major renovation projects.

Chicago

Global Building Management System (GBMS) was implemented in order to monitor and control municipal energy efficiency systems.

Seattle

Washington was the first state in the

country to mandate that all new government buildings meet LEED Silver.

1998 New Orleans Greenhouse Gas Emissions:

- Total of 283,000 tons of CO₂ released from municipal buildings.
- The Sewerage & Water Board contributed over 60% of the city's carbon footprint.
- The operation of municipal buildings in NO was 32% of the total municipal emissions.

Regulation, Zoning, and Codes



INTRODUCTION

Energy and environmental considerations are paramount at several scales of building. Land use, zoning, planning, and development policy have to interface with smaller-scale green building considerations in order to make New Orleans a model sustainable city.

While all of Louisiana recently adopted IBC 2003 building code, New Orleans' zoning was last updated in the 1970s. Other cities such as Portland, New York, Boston, and Seattle have dramatically revamped their planning, zoning, and code to encourage denser and greener development, but New Orleans has lagged far behind.

The 1999 Master Plan and the 2001 Comprehensive Zoning Ordinance have been shelved, and the City Planning Commission has put revising the Comprehensive Zoning Ordinance out for bid. Energy efficient building standards and sustainable, mixed-use urban design should both be considerations in the city's regulations, zoning, and building code.

CPC has verbally agreed to collaborate with ORDA to assist with the analysis of current zoning, code and regulation. Once the analysis is complete; ORDA will supply CPC with recommendations for incorporating environmental and energy considerations in the comprehensive zoning ordinance and master plan

Boston's Redevelopment Authority (BRA) is a dynamic organization that does both planning and development for the City of Boston, implementing planning and development policy, including recent energy and environmental considerations.

Portland has developed one of the most aggressive land use

Green Buildings & Energy Efficiency

policies in the US, one that encourages dense, center city and infill development while discouraging “greenfield” or new, suburban development.

LESSONS LEARNED

Cities with the most effective environmental and energy programs also have the most coherent planning, zoning, and regulation.

Additionally, the importance of up-to-date zoning, planning, and regulation cannot be overemphasized. While New Orleans is now one of the best-planned cities in the world, zoning, planning, and regulation are required to institutionalize post-Katrina plans. Review existing regulations, code, and zoning, and begin to implement recommended changes.

Analyze Regulations, Code, and Zoning

Analyze current zoning, code, regulation, and planning. Prepare to pass the Master Plan and the Comprehensive Zoning Ordinance.

Create a New Orleans Standard

Review best practices and create a standard equivalent to that of Seattle, Chicago, Toronto, and LEED but designed for warm, humid, coastal places.

The standard should include a certification, such as Seattle’s BuiltGreen or Chicago’s Chicago Standard, that creates a brand for buildings that meet certain qualifications.

The standard should differ for building types, such as the Florida Green Building Code. The New Orleans

Standard should meet local requirements by including gray/stormwater retention, green roofs, transit, architectural, and other locally-oriented features.

Requirements should increase over time. Portions of the standard should be made mandatory and integrated into the building code.

Pass comprehensive Zoning Ordinance and Master Plan with environmental and energy considerations. Doing so will lay the groundwork for sustainably rebuilding the City of New Orleans.

Restore City Planning Commission Authority over Planning, Zoning, and Land Use Decisions

The City Planning Commission’s activities

are currently subject to revision and veto by the City Council. Work with the City Council and the City Planning Commission to ensure that the CPC’s decisions are given the force of law. Pass the Master Plan and Comprehensive Zoning Ordinance.

Create Incentives for Green Building, Planning, and Design

Bonuses and incentives should be codified into zoning and regulation.

- Floor Area Ratio bonuses for green building.
- Transferable development rights (TDRs) for green development.
- Additional requirements could be mandated for all development above a certain threshold and for all national chains.

Green Buildings & Energy Efficiency

Establish New Orleans as a model for coastal cities by creating code, zoning, and planning that shapes city development with energy and environmental considerations in mind. Influence building pattern for long-term sustainability.

Long-Term Sustainability Planning

The City should initiate a process of long-term sustainability planning that incorporates green building into plans for the long-term economic and ecologic viability of the Greater New Orleans region.

High Density Corridors

Create a land-banking program that incentivizes New Orleans residents to move from low-density, below-sea-level areas to prescribed high-density areas. New

Orleans' existing urban design should guide development into extant neighborhoods and along the City's grand avenues.

Bonuses and incentives should be created for

- Infill development
- Transit-oriented development
- Development along specific avenues (Claiborne, Canal, & Tulane).

EXISTING LOCAL PROJECTS

The City Planning Commission currently has put out an RFP for revision to the Master Plan and the Comprehensive Zoning Ordinance. Both can be revised with energy-efficient building and ecologic viability in mind.



Codes - A building code is a legal document used by a jurisdiction to specify regulations that protect the public health, safety, and general welfare regarding the construction and occupancy of building and structures.

Standards - Building standards provide commonly accepted measures for materials, products, processes, or procedures.



There are a variety of building standards and codes available from which New Orleans can draw.

BEST PRACTICES

Leadership in Energy and Environmental Design (LEED)

A widely used standard developed by the US Green Building Council.

Model Green Home Buildings Guidelines
National Association of Home Builders

Portland G/Rating
G/Rated is a program designed to accelerate the

adoption of green building practices in Portland.

Seattle BuiltGreen

A certification that the newly constructed home contains selected Built Green features and meets the criteria on the Built Green checklist.

The Chicago Standard

The Chicago Standard was developed to guide the design, construction and renovation of municipal facilities in a manner that provides healthier indoor environments, reduces operating costs and conserves energy and resources.

Toronto Green Development Standard

Toronto, like Chicago, has developed its own standard which has been adapted from LEED and other sources.

Florida Green Building Coalition

The coalition has developed standards for five building types, which are designed for hot and humid climates such as New Orleans.

Conclusion

New Orleans is poised to become one of the greenest-built cities in the world.

Green Buildings & Energy Efficiency

SHORT-TERM

Implement actions of the Green Building Program as outlined in Ordinance No. 22863.

Educational outreach to assist citizens with understanding the benefits of SB90, a 50% tax credit for up to \$25,000 of solar, wind and thermal energy systems.

Prepare a Building Code Analysis and Identify Barriers in Code that act as roadblocks and impediments to adoption of energy efficiency housing.

ASHRAE standards can improve commercial buildings and small offices by 30-40% with off-the-shelf technologies.

MEDIUM-TERM

The Executive Branch and the City Council through its utilities committee will jointly develop a unified energy policy for the City, and will implement it according to their respective duties as outlined in the Home Rule Charter.

Work with stakeholders to create programs to educate contractors and the public about the deconstruction process. Work closely with the Clinton Climate Initiative on a green building initiative that will create financing programs for low income residents and mandatory green standards for developers.

Establish a commercial green building standard that meets ASHRAE 130.1 or LEED-NC.

LONG-TERM

Create standards for contractors and facilities that resell the materials. Investigate bulk purchasing. By assembling resources and purchasing products in large quantities, the city can save money and still utilize products that are normally expensive.

Develop voluntary, New Orleans-specific green standards, certification criteria, and goals for sustainable construction. The standard should differ for building types, as the Florida Green Building Code does. The New Orleans Standard should meet local requirements by including gray water/storm water retention, green roofs, transit, architectural, and other locally-oriented features.

Alternative Energy

"We are like tenant farmers chopping down the fence around our house for fuel when we should be using Nature's inexhaustible sources of energy — sun, wind and tide. ... I'd put my money on the sun and solar energy. What a source of power! I hope we don't have to wait until oil and coal run out before we tackle that."

- Thomas Edison (1931)

INTRODUCTION

Perhaps the most significant roadblock to mitigating climate change is the current policy for the generation and distribution of energy. Reducing the city's dependency on fossil fuels by diversifying its energy sources (i.e. solar, hydrokinetics, biofuels) will be a major step on the path to sustainable recovery and diminishing the detrimental effects of greenhouse gas emissions.



As a city in the midst of unprecedented rebuilding and revitalization, New Orleans is uniquely positioned to assume a leading role in the "ground-up" institutionalization of sound environmental practices and "green" development, particularly with regards to diversifying its energy resources. Major opportunities for this development are already underway in the city, including the designation of New Orleans as one of twenty-five "Solar Cities" by the U.S. Department of Energy. The Solar America Cities Initiative

is a grant designed to make solar energy cost-competitive by 2015.

According to a recent report from the *U.S. News & World Report*, the most widely used renewable energies—wind, solar, and ethanol—only currently provide 3.6 percent of the nation's energy, and government predictions are that the renewables will only increase to 4.6 percent of the nation's energy by 2030. Kholsa Ventures, a venture capital firm in Silicon Valley that has a goal of far-surpassing the federal government's predictions in California, estimates that a 50 percent replacement of fossil fuel energies with renewables is the minimum needed to make a real impact on climate change. Through an extensive marketing and incentives program spearheaded by the Solar Cities Initiative and the

recent SB-90 bill for solar tax credits, the creation of two solar-powered schools by 2009, an exploration of viable wind energy farms, and continuous localized monitoring and improvement of the city's energy footprint, New Orleans can in the next two years build the momentum necessary to surpass the government's predictions within the city, and to join California and other "greening" states in the movement to effectively mitigate climate change.

One of the major tasks of lowering emissions from the city's vehicles is a fundamental change in consumer habit and demand. A proposal currently in Congress would force American cars to increase their efficiency to an average of 35 miles per gallon by 2020. At a recent Tulane

University-sponsored conference on the future of the petroleum industry, however, a representative of Shell Oil and the Society of Petroleum Engineers stated that increasing fuel efficiency to 25 miles per gallon would drastically decrease the nation's dependency on foreign oil, and significantly reduce carbon emissions, which reached 311.9 million metric tons from motor gasoline alone in 2003.

Setting a higher standard for fuel efficient vehicles and carbon reduction in New Orleans would not only reduce the city's carbon footprint, but also establish a greater consciousness and capacity within the community for maintaining a healthy balance between consumption and environmental waste.

WINDING RIVER **New technology** **could harness the** **power of Mississippi,** **turning it into a** **power plant**

Source Times Picayune.
Sunday, November 04, 2007

Existing Local Programs

- The Southeast Louisiana Clean Fuels Partnership, an initiative of the U.S. Department of Energy's Clean Cities Program, is working to develop a market for alternative fuels in the region and to increase public awareness about the benefits of utilizing such resources.
- Green Light New Orleans is a local non-profit that has the goal to install 3 million CFL Energy Star Rated light bulbs in New Orleans' residences in the next four years.

- Greater New Orleans Clean Cities Coalition is a part of a voluntary US Department of Energy program to encourage the use of alternative fuels.
- New Orleans just passed SB 90, which provides for the most progressive solar energy and thermal tax credits in the entire country for residential units.
- Green Earth Fuels just built a new biodiesel plant in Jefferson Parish, and South Coast Biodiesel sells biodiesel processors from Belle Chasse.
- The New Orleans metropolitan region has attracted two major biofuel facilities, one built by the Renewable Energy Group in St. Charles Parish, which will produce 60 million gallons of biodiesel fuel a year, and another built by Green Earth Fuels in Jefferson Parish.

Lessons Learned

New Orleans needs to begin laying the technical, regulatory, and financial groundwork for the adoption of renewable energy generation and distribution.

Emissions Inventory and Forecast. The most recent greenhouse gas audit in New Orleans took place in 1998. The city is in the process of recalculating its energy footprint audited again to establish the necessary benchmarks for increased efficiency.

Distributed Generation Study. Study the potential for generating electricity from several smaller sources

Capacity-Building. Through the Solar Cities Initiative, and with the aid of the city's 44 energy initiatives affiliates, the city should

launch a major marketing campaign to inform the public about the environmental and economic benefits of alternative energy, and hold neighborhood based workshops on these resources to ensure that the message reaches all members of the New Orleans' community.

Green Business Council. Create a council of green and renewable energy business leaders. The partners should include representatives in these technology areas: Solar, Wind, Biodiesel, Ethanol, Geothermal and hydrokinetic energy

Ethanol. New Orleans should coordinate with The Louisiana Department of Agriculture to develop relationships with local energy users and the sugarcane ethanol plants in the state.

Renewable Energy. The City of New Orleans should begin adopting renewable energy and fostering renewable energy and economic development.

Localized Energy Efficiency Initiatives. New Orleans should create a Memorandum of Understanding between the City and community-based organizations to jointly pursue funding resources for simple projects such as installing CFL Energy Star rated light bulbs in New Orleans residences.



Figure 1. CFL Light bulb

Renewables Manufacturing. With the demand-stimulation of SB-90, the City of New Orleans should attract at least one major manufacturer of solar panels.

Renewable Energy Incentives. As with the solar tax credits provided by SB-90, create incentives for ethanol, wind, and biodiesel.

Renewable Power Procurement. In the medium-term, 10 percent of New Orleans' energy should be purchased from renewable sources by 2010.

Explore Hydrokinetic Power. Louisiana has prime locations for hydrokinetic energy farms, and it has the water resource management expertise to maintain competitive advantage. Work with

local startups to create the first hydrokinetic project in the Mississippi River.

S&WB Anaerobic Cogeneration. New Orleans should encourage the installation of cogeneration on as many S&WB facilities as possible.

Renewable Portfolio Standard. New Orleans should require that Entergy New Orleans meet certain standards for its energy portfolio. By 2010, 10 percent of the city's energy should be renewable, and the figure should increase to 20 percent by 2015.

Maintaining Localized Incentives. The city should require all community-based partners to establish long-term goals to complete their missions in the neighborhoods which they serve, and

assist in when necessary to ensure that all goals are being met.

Greenhouse Gas Reductions/Carbon Caps.
The City of New Orleans should commit to reducing its greenhouse gas emissions dramatically: 30 percent reduction by 2020.

Best Practices

Seattle

- Seattle City Light is the first utility in the country to achieve zero net emissions of greenhouse gases through the purchase of Renewable Energy Credits (RECs).

Salt Lake City

- Blue Sky program enables residents to purchase monthly blocks of wind power for a flat rate (100kWh for \$1.95).

Portland

- Oregon Energy Trust was created in 1999 by a mandate from the Oregon Public Utilities Commission that the investor-owned utilities in the state collect a 3% public purpose charge. The charge is used

to finance energy incentives and is an effective means at incentivizing commercial green building.

Boston

- Boston's green/renewable power procurement policy currently provides 8.6% of Boston's total energy use through renewable sources.

Austin

- 30% of city energy from renewable sources by 2020.

SHORT-TERM

Emissions Inventory and Forecast

Recalculate the City's energy footprint to establish the necessary benchmarks for increased efficiency.

Distributed Generation Study

Study the potential for generating electricity from several smaller sources.

Capacity-Building

Train and Certify Builders and Energy Raters.

Ethanol

Research the feasibility of using sugarcane ethanol in the city's fleet.

MEDIUM-TERM

Renewables Manufacturing

Develop incentives to attract companies that provide products and services that support SB-90.

Small-Scale Wind Power

Work with local startups to create the first offshore U.S. wind-to-energy farms. Louisiana has prime locations for wind energy farms and the offshore expertise to maintain a competitive advantage.

Hydrokinetic Power

Work with local startups to create the first Run-of-the-River Hydrokinetic in Louisiana. New Orleans has prime locations for hydrokinetic power energy farms on the Mississippi River. Currently there are 3 private companies with preliminary permits to develop renewable energy projects along the City's waterfront.

LONG-TERM

Renewable Portfolio Standard

By 2010, 10 percent of the city's energy should be renewable, and the figure should increase to 20 percent by 2015. New Orleans should require that Entergy New Orleans meet these standards for its energy portfolio.

Greenhouse Gas Reductions/Carbon Caps

New Orleans should commit to reducing its greenhouse gas emissions dramatically: a 30 percent reduction by 2020.

Recycling

Introduction

Recycling has become an integral part of waste management in America and is a prerequisite for a city to be considered green. Hurricane Katrina disrupted curbside recycling and it has not been reestablished. New Orleans should reestablish curbside recycling by using the model of other cities that have created efficient and cost effective recycling programs.

Existing Local Programs

- Phoenix of New Orleans is currently collecting curbside recycling. Residents pay \$15 dollars a month and the materials are taken to a facility in Baton Rouge.

- The recycling facility that New Orleans used before Katrina was disabled during the storm. It has been repaired and is now operational.

Lessons Learned

- Allowing residents to place all recyclables in a single bin is a good way to increase participation rates and lower payments to haulers. The biggest obstacle for this method is keeping contamination rates low.

- Recycling programs work best if recyclables are picked up on the same day as trash.

- Large bins increase participation rates and allow for automated pickup, which reduces injury to workers.

- Participation rates are highest when citizens are given incentives to

recycle, such as paying them for their material or instituting a pay as you throw program.

- Education is a crucial component to program success.



Best Practices

- In the early 90's, California passed legislation requiring each community to reduce their landfill usage by 50% by 2000. This has spurred rapid progress in recycling rates.

- The city of Phoenix and the recycling

facilities it contracts with share revenues from reselling materials. They city also has performance requirements for the facilities and haulers.

- A number of cities have banned putting recyclables into trash. Tickets are issued to repeat offenders, but this is rarely needed.

- British Columbia has banned putting computers, televisions and computer towers in the trash. These materials are collected at curbside and the manufactures of these items are taxed to pay for the program.

- Bergen County New Jersey and St. Paul Minnesota requires businesses to recycle.

- Leverett, Massachusetts and a number of other

Waste Reduction, Reuse, & Recycling

communities have drop off points where residents can bring materials that are too big to be picked up at curbside.

- Seattle has a “friends of recycling” program that trains people to serve as a neighborhood resources for residents who want to learn about recycling.

- Ann Arbor Michigan contracts to local non profits that make more than 100 presentations in schools each year.

- Madison Wisconsin makes announcements called Earth Alerts during children’s television programs.

Cost and Benefits

- Reestablishing curbside recycling will appease a number of neighborhood groups

and non profits who are lobbying for it.

- Pre Katrina recycling rates were low. The city will have to expend resources to increase awareness and interest in recycling.

Indicators

- Participation rates
- Recyclable materials disposed in landfills
- Waste management costs

Composting

Introduction

Cities across the world have begun to view organic waste as a resource, not a burden. A composting program follows this logic by taking yard clippings, food scraps and biosolids and turning them into high quality soil. This allows cities to reduce their waste handling and disposal costs, drastically reduce land fill usage, sell the products for a profit, reduce the use of fertilizers, and control erosion. New Orleans should create a composting program by using other successful programs as a model.

Existing Local Programs

Several nonprofits in the city are running small scale composting projects. Other cities in

Louisiana, including Baton Rouge and Lafayette have active composting and yard waste programs.

Lessons Learned

- Composting programs can reduce the waste stream by up to 30%.

- To create a vibrant market for compost, cities need to create product standards, classifications to identify high and low quality material and quality control procedures.

- Composting programs run best when cities create standards for how composting facilities operate.

- Backyard composting reduces hauling costs and emissions.

- Participation in curbside composting programs is highest if

Waste Reduction, Reuse, & Recycling

compost is picked up on the same day as trash.

- High quality compost compare favorably with peat and other high quality fertilizers.

Best Practices

- San Francisco is one of many cities with curbside collection of yard waste and kitchen scraps. Materials are taken to privately-owned composting facilities outside of the city and the facilities maintain ownership of the material.

- Massachusetts has contracted a non profit to run a program where haulers collect compost from restaurants, hotels and supermarkets. The materials are brought to local farms.

- Provo UT has drop off sites where residents and businesses can bring their compost.

The city has a lower participation rate than cities with curbside collection, but they do not have the costs of running a program.

- A number of communities encourage residents to let grass clippings remain on lawns, which reduces hauling and keeps nutrients in the lawn.

- The Massachusetts Department of Environmental Protection is working to establish community Christmas tree recycling programs in every region of the state.

- Over 20 states ban putting yard waste in landfills.

- A number of communities have composting in elementary schools as part of earth and environmental science

education. This reduces their waste stream by 10-14%.

- The State of North Carolina gives grants and technical advice to emerging composting facilities.

Costs and Benefits

- New Orleans can reduce its waste management costs with an efficient composting program.

Indicators

- Waste diversion rates
- Number of private composting facilities
- Waste management costs



Deconstruction

Introduction

Deconstruction is an alternative to demolition that involves reusing building materials instead of placing them in a landfill. Recycling housing materials used to be a common practice in America but fell out of favor in the 1950's as the nation's wealth increased. Deconstruction is becoming more widespread in America as costs have become competitive with demolition in many circumstances. The large number of houses that need to be taken down in New Orleans would allow the city to become a leader in the industry.

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Existing Local Programs

During the summer, FEMA required the contractors they had hired to take down 60 houses, deconstruct the buildings, and give the material to a local non-profit for resale. Currently there are three nonprofits that are deconstructing houses in the city, nine contractors that can be hired to deconstruct properties, and seven facilities that are reselling materials.

Lessons Learned

- The extra costs of deconstruction can be offset by selling recovered materials.
- Deconstruction industries work best if local governments create standards for contractors and facilities that resell the materials.
- Companies that resell materials can apply for

non profit status. This allows residents to get a tax write off by donating the materials to them.

- As local industries become more established, costs for deconstruction drop.
- It is easier to receive certification from LEED and the US Green Building Council if materials are recycled.

Best Practices

- Massachusetts has banned putting brick, concrete, metal, wood and asphalt from houses in landfills.
- Seattle requires a license to demolish a house. To get the license, contractors must demonstrate that they will recycle 85% of the materials. There were several companies doing deconstruction before this requirement was created and the industry has expanded quickly since then.

- In San Jose, homeowners have to pay a deposit to get a demolition permit. If they recycle more than 70% of the building material they get 90% of the deposit back.
- After the Northridge earthquake in Los Angeles, 86% of the building debris was recycled.

Costs and Benefits

- Reselling materials creates low cost building products.
- Deconstruction preserves architectural heritage by keeping materials in use.
- Deconstruction allows hazardous materials to be better handled than in demolition situations.

Indicators

- Reduction of building materials in landfills.
- Decrease in deconstruction costs.
- Growth of deconstruction industry.

Waste into Energy

Introduction

Waste-to-energy is an established industry that has been in existence since the early 1970s. It is an integral component of a comprehensive, integrated solid waste management program for many municipalities.

The 87 waste-to-energy plants nationwide dispose of more than 90,000 tons of trash each day while generating enough clean energy to supply electricity to about 2.3 million homes nationwide (Source: ISWA).

There are several federal statutes and policies that define waste-to-energy as a

Waste Reduction, Reuse, & Recycling

renewable source of energy (as of 6/30/07):

- Energy Policy Act of 2005
- Federal Power Act
- Public Utility Regulatory Policy Act (PURPA) of 1978
- Biomass Research and Development Act of 2000
- Pacific Northwest Power Planning and Conservation Act
- Internal Revenue Code (Section 45)
- Executive Orders 13123 and 13423
- Federal Energy Regulatory Commissions Regulations
- (18 CFR.Ch. I, 4/96 Edition, Sec. 292.204)

Existing Local Programs

Currently, Orleans Parish does not have an operational waste-to-energy program, but there are existing

programs in the State of Louisiana.

The Jefferson Parish Landfill provides energy to Cytex Industries Inc via a 4.2-mile pipeline. Previously flared landfill gas used as alternative fuel reduces dependence on fossil fuels and provides long-term economic benefit to both parties.

In Shreveport, LA, the GM Shreveport Assembly Plant. has a seven mile pipeline that goes from the landfill to the GM Plant. This process uses LFG to fuel steam boilers at the plant for both heating and cooling purposes.

Current Projects Proposed in New Orleans

- Transload Facility
- Sun Energy Plant

Lessons Learned

According to the U.S. EPA, nearly one ton of CO₂ equivalent emissions are avoided for every ton of municipal solid waste handled by a waste-to-energy plant due to the following:

Avoided methane emissions from landfills:

When a ton of solid waste is delivered to a waste-to-energy facility, the methane that would have been generated if it were sent to a landfill is avoided. While some of this methane could be collected and used to generate electricity, some would not be captured and would be emitted to the atmosphere.

Avoided CO₂ emissions from fossil fuel combustion: When a megawatt of electricity is generated by a

waste-to-energy facility, an increase in carbon dioxide emissions that would have been generated by a fossil-fuel fired power plant is avoided.

Avoided CO₂ emissions from metals production:

Waste-to-energy plants recover more than 700,000 tons of ferrous metals for recycling annually. Recycling metals saves energy and avoids CO₂ emissions that would have been emitted if virgin materials were mined and new metals were manufactured, such as steel.



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Waste Reduction, Reuse, & Recycling

Best Practices

The Integrated Waste Services Association (IWSA), the American Society of Mechanical Engineers (ASME), and the Solid Waste Association of North America (SWANA) in partnership with the Waste-to-Energy Research and Technology Council (WTER) at Columbia University host an annual conference that is widely recognized as the leading industry technical conference.

Studies have demonstrated that communities served by waste to-energy have recycling rates that are nearly twenty percent higher than the national average.

Greer, South Carolina
17.46 million tons waste-in-place were converted to energy using Combined Heat

and Power (cogeneration) and Direct Thermal (23 paint shop oven burners and indirect heating of paint shop 4.8 megawatts (MW). The project produced 72 million Btu/hr and saved the company \$1 million/yr. The annual greenhouse gas reductions is equivalent to planting 17,600 acres of forest, removing the emissions of 12,400 vehicles, or preventing the use of 150,300 barrels of oil. Annual energy savings equate to powering 3,000 homes and heating 23,100 homes. (BMW Manufacturing Co., LLC)

Lancaster County, PA
Energy created at the WTE facility provides power for the Turkey Hill Dairy.

Pinnelles County, FL

Some of the energy generated at the plant is sold to progress energy (local utility company)

Foreign Countries

Waste-to-energy facilities in Japan handle biosolids as well as municipal waste streams. In Germany, waste-to-energy facilities have allowed communities to achieve high recycling rates.

Costs and Benefits

Jefferson Parish Landfill LFG Project. Annual greenhouse gas reductions equivalent to planting 6,200 acres of forest, removing the emissions of 4,400 vehicles, or preventing the use of 53,200 barrels of oil. Annual energy savings equate to heating 13,600 homes. Estimated

emissions reductions of 0.0062 million metric tons of carbon equivalents. Project was completed after Hurricane Katrina.

Indicators

-Significant energy production from waste to energy facilities. Related reductions in the costs of local energy due to increased supply.

Waste Reduction, Reuse, & Recycling

SHORT-TERM

Issue an RFP to re-establish curbside recycling in the City of New Orleans

Require that waste-to-energy developers submit emissions estimates, waste diversion rates, energy production estimates, and identification of waste input sources and types.

Monitor compliance and progress with the City's Environmental Conservation Policy (CAO Policy Memorandum R103).

Monitor the overall rate of recycling and waste diversion in New Orleans.

MEDIUM-TERM

Support the establishment of a waste-to-energy project that serves New Orleans.

Monitor compliance with their permitted operating requirements.

LONG-TERM

Create an integrated system of facilities that combines recycling, composting, reuse, converting waste to energy, household hazardous waste centers, municipal waste collection, and landfilling to effectively manage the city's waste stream.

Create a waste diversion goal for the city to encourage more sustainable practices. Meet or exceed the goal by a set date.

Introduction

Transportation not only provides a critical link from home to employment, services, and community but also reshapes the behavior of our residents and design of our cities. In recent decades, the public has become interested in promoting transportation options that align with their community goals. People want better access to goods and services, cheaper and more efficient transit between destinations, and less environmental damage.

The least environmentally sound and cost effective transportation mode is the private automobile. Alternative, or sustainable, transportation modes such as mass transit or non-motorized modes provide greater societal benefits at significantly lower costs. By using

both incentives and minimum environmental requirements, our city can encourage the use of alternative transportation modes. Reduced automobile dependency reduces environmental pollution by lowering vehicle emissions and increases socio-economic equity by providing comparable but less costly alternatives to automobile ownership.



Biking and walking are the most sustainable methods of transportation because they do not generate

pollution, traffic, or high infrastructure costs. Public transit is another alternative that provides access to goods and services with minimal environmental and social costs. Additionally, transit can generate economic development and allow for improved emergency preparedness. Much of New Orleans' urban landscape was created before the automobile and is thus designed around pedestrians and streetcar transit. As a result, New Orleans remains a walkable and bikeable city but much more could be done to promote non-motorized transportation and expand the city's transit network.

Effective parking management strategies have a direct influence on reducing vehicle trips especially by commuters. In addition, management of parking supply,

especially metered on-street parking, can dramatically reduce time vehicles spend circulating and congesting roadways. By reducing vehicle trips and circulating, we significantly lower vehicle emissions.

EXISTING LOCAL PROGRAMS

- The Regional Planning Commission (RPC) has created the New Orleans Metropolitan Bicycle and Pedestrian Plan.
- RPC has also obtained full membership in the local chapter of the Department of Energy's Clean Cities Coalition.
- The Department of Public Works has \$4 million in bonds that can be used for bicycle facilities including striping bicycle lanes and bicycle parking. 288 bicycle racks will be

installed throughout the downtown area.

- St. Charles streetcar service has been fully restored by the Regional Transit Authority (RTA). Plans to develop a line down Rampart/St. Claude have been put on hold.
- RTA has also put 6 biodiesel buses into service. These buses significantly reduce the carbon emissions from the city's transportation sector.
- The City of New Orleans currently has over 200 flex fuel/ethanol vehicles. Work is currently underway to develop a fueling station to provide E85 fuels for these vehicles.



LESSONS LEARNED

Increasingly, alternative fuels and vehicles are becoming an affordable option for reducing vehicle emissions. As the price of gasoline continues to rise, alternative fuel vehicles such as hybrids can also significantly reduce operational costs as well as provide an environmental benefit.

Flexible automobile usage can also have a great effect in reducing vehicle trips. Technology has made telecommuting a cheap and accessible option to work at home or remote center some or most days of the week. Car sharing programs allow individuals to rent a car for short periods of time for occasional automobile use, eliminating the need to purchase and maintain one. Typically cars are located in highly pedestrian neighborhoods

such as downtowns and around college campuses.

Transit has also become an increasingly popular sustainable transportation alternative.

BEST PRACTICES

Denver - Local voters agreed to fund an extensive light rail system.

Portland - The City built a light rail network and is currently expanding the streetcar service in downtown adjacent neighborhoods.

Baton Rouge –Capital Regional Planning Commission maintains the Baton Rouge Area Commuter Services

Seattle - Telework
Seattle helps companies establish commuter programs.

California – Parking “cash-out” program has shown early results of reducing emissions by 12%.

Chicago – I-GO Car Sharing is a local non-profit and has demonstrated reduced transportation cost to members

Denver – Green Fleet Executive Order

Los Angeles - Ports of LA/Long Beach Clean Truck Program

New York - Ports of NY/NJ investing in electric cranes and alternative fuel fleet update

Seattle – Clean and Green Fleet: Action Plan for the City.

Indicators

- Establish a baseline inventory of current city fleet and establish yearly status reports.
- Establish measurable goals to increase fleet corporate average fuel economy, reduce vehicle size where necessary, and minimize vehicle miles traveled.
- Track commuter telecommute choice through employee commuting surveys
- Number of car sharing vehicles available in the city.
- Miles of bicycle paths and lanes, especially contiguous miles.
- Survey usage of bicycle parking facilities to track popularity.
- Collect employee method of commuting surveys annually by employers
- Replace current city owned vehicles with biodiesel and hybrid

vehicles whenever possible.

- Support the establishment of city wide bike paths and alternative transportation



Transportation & Clean Fuels

SHORT-TERM

Develop program with DPW to coordinate street resurfacing with proposed bicycle routes and identify gap funding where possible. Include Striping for bicycle lanes as part of the resurfacing.

Ensure levee bike path restored after Army Corp levee work.

Create a green fleet procurement and management policy

Encourage the development of clean fleets to other sectors including:

- School districts
- Louis Armstrong International Airport

MEDIUM-TERM

Implement Bicycle and Pedestrian Master Plan for the City.

Create tele-commuter centers that provide remote office services throughout the target zones.

Promote Transit-Oriented Work with RTA and local businesses to develop and promote an employer transit pass program.

Expand streetcar system to include (WHAT)

Work with Port of New Orleans to develop an action plan for greening the port to reduce emissions from port related activities and improve air quality in surrounding community.

Promote Transit-Oriented Development along current transit corridors (e.g., Canal Blvd.)

LONG TERM

Build East-West light rail linking airport to downtown

Support a commuter rail linking Baton Rouge and New Orleans

Construct ethanol refueling station for the City's 200+ E85 vehicles.

Become an active participant of Southeast Louisiana chapter of Clean Cities Coalition.

Attract national company, Flexcar/Zipcar, to local area and help promote service

Foster development of local car sharing company for enhanced coverage

Promote light rail in the regional development of Greater New Orleans. Enhance rail services.

Environmental Outreach and Justice

Introduction

As we rebuild our city in the wake of Hurricane Katrina, the City of New Orleans is committed to recovering and preserving a healthy environment, and to moving forward with just and ethical environmental legislation and programs for all citizens and communities.

Traditionally, the movement for Environmental Justice has been spearheaded by activists, non-profit groups, and non-governmental organizations (NGOs). Because Environmental Justice has not historically been a movement within Government itself, the City recognizes that it will take time and considered planning to develop and achieve an Environmental Health and Justice platform for

the future. In the interim, the City will focus on reviving pre-Katrina environmental programs, funding for existing and new environmental programs, capacity-building, public outreach, and developing 10-year and 20-year environmental plans.

Achieving the goal of Environmental Health and Justice for all citizens of New Orleans will require the long-term coordination of diverse governmental agencies as well as cooperation and assistance from the many non-profit organizations, non-governmental organizations (NGOs), local businesses and business leaders, and the citizens of New Orleans.

Lessons Learned

According to a recent survey conducted by the City of New Orleans, two of the top three concerns noted by citizens of New Orleans include crime and education – especially the high failure rate and dropout rate of New Orleans students.

The US Environmental Protection Agency (EPA) states that the chemical element **Lead** (chemical symbol = Pb), "is a highly toxic metal that was used for many years in products found in and around our homes." Childhood exposure to Lead (Pb) in our environment, even at very low levels (low concentrations) can result in a range of health effects, ranging from reduced IQ, learning disabilities, poor performance in school, attention deficit / hyperactivity

disorders (ADHD), behavioral problems, stunted growth, impaired hearing, and kidney damage.

Higher levels of blood Lead (Pb) contamination may result in mental retardation, coma, seizures, and even death. In addition, recent scientific research indicates that childhood Lead (Pb) poisoning may be associated with juvenile delinquency and criminal behavior.

In adults, blood Lead (Pb) can increase blood pressure and cause fertility problems, nerve disorders, muscle and joint pain, irritability, and memory or concentration problems.

Children under 6 years of age are most at risk of blood Lead (Pb) poisoning due to the

presence of Lead (Pb) in their environment. According to the EPA, research suggests that the primary sources of Lead (Pb) exposure for most children are deteriorating lead-based paint, lead-contaminated dust, and lead-contaminated residential soil. The primary sources of lead-contaminated dust and lead-contaminated soil are lead-based paint, and the historic use of leaded gasoline. Eating and breathing lead-based paint, lead-contaminated dust, and lead-contaminated soil puts children and even family pets at risk of blood Lead (Pb) poisoning.

In 1978, the US Consumer Product Safety Commission (CPSC) banned the sale of paint containing more than 0.06% Lead (Pb) intended for

consumer use. Based on the age of most homes and multi-family residences in New Orleans (some estimates are that up to 90 percent of the housing in the City was constructed prior to 1978), a very high percentage of the housing stock has the potential to contain lead-based paint. Deterioration of both interior and exterior paint leads to lead-contaminated dust and lead-contaminated soil.

In 1996, after a phase-out period, the EPA banned the sale of leaded gasoline. Laboratory analysis of soil samples collected across Orleans Parish have shown that residual Lead (Pb) contamination of soil is generally higher in inner city locations and along major traffic corridors, where the

highest concentrations of vehicular traffic have existed for decades.

In the city of New Orleans, despite the ban on these leaded products, studies led by Dr. Howard Mielke, Research Professor at the Tulane / Xavier Center for Bioenvironmental Research, indicated that prior to Hurricane Katrina, over 20% of inner-city children ages 6 years and under had elevated blood Lead (Pb) levels at concentrations above the Centers for Disease Control (CDC) recommended target for elimination of 10 micrograms per deciliter (10 ug/dL). Some census tracts had up to 50% of children with elevated blood Lead (Pb) levels above 10 ug/dL.

Local “Lead Watch Community” Program

Utilizing grant money from the US Department of Housing and Urban Development (HUD), the City of New Orleans is engaged in developing a “Lead Watch Community” program. This community-focused program aims to create model communities where the residents have been informed about Lead (Pb) hazards in their environment; the Lead (Pb) hazards have been identified and remediated or mitigated; children ages 6 years and under have had blood Lead (Pb) testing; and an ongoing community participation exists in protecting residents and the environment from Lead (Pb) hazards in that community. The title of the program, “Lead Watch Community” is

Environmental Outreach and Justice

based on the “Neighborhood Watch” program, where neighbors within a community watch for crime and criminal behavior in an effort to make the neighborhood safer for all residents. In a “Lead Watch Community,” the residents will take active responsibility for Lead (Pb) hazard awareness, safe work practices during cleanup (remediation) and/or prevention (mitigation), and monitoring for further Lead (Pb) contamination.

The steps taken by citizens of a Lead Watch Community will make the environment safer for themselves and their children and pets, thereby reducing the potential for childhood blood Lead (Pb) poisoning within the community. These

benefits have the potential to enhance the desirability, and therefore potentially the market value, of residences within a Lead Watch Community.

Additionally, these Lead Watch Communities are intended to be models that become seed communities for the further spread of Lead (Pb) hazard awareness throughout the general public, as well as foundations for a broader environmental consciousness and prioritization within the citizenry of New Orleans.

Environmental Cleanup

As part of the City’s Lead (Pb) remediation programs under this grant, the City aims to conduct community outreach to inform and/or teach the public

regarding various methods for cleanup (remediation) and/or reduction and prevention (mitigation) of Lead (Pb) hazards, so that appropriate methods and techniques can be selected and used on a property-by-property basis. Examples of remediation and/or mitigation options include removal of soil/paint, cover or encapsulation of soil/paint, installation of hardscape over lead-contaminated soil, chemical stabilization of Lead (Pb) in soil, phytoremediation (using plants to remediate soil), and potentially other new technologies as they may be developed.

In collaboration with existing agencies and programs (both governmental and non-governmental) that are

currently working with environmental Lead (Pb) and blood Lead (Pb) issues, the City of New Orleans looks forward to promoting a new community awareness of the existence of environmental Lead (Pb) hazards. The collective efforts of all concerned agencies, groups, and programs should help reduce the frequency of blood Lead (Pb) contamination, and thereby lower the resultant impact of societal and health effects.

Cost and Benefits

Additional studies by Dr. Mielke and others estimate that the minimum cost to society associated with childhood blood Lead (Pb) contamination in New Orleans is well over \$75 million annually. The estimated cost to

Environmental Outreach and Justice

remediate lead-contaminated soil in New Orleans is \$300 million. Mitigation or remediation of residential housing that contains lead-based paint can range from a few hundred dollars to tens of thousands of dollars per residential unit or property.

Every dollar spent towards the cleanup of environmental Lead (Pb) contamination reduces the yearly cost to society – to the City and her citizens – and improves the quality of life. Benefits to individuals, families, and society are likely to include improved performance in school for children, and reduced criminal behavior by young adults, as the prevalence of childhood blood Lead (Pb) poisoning diminishes.

Existing Local Programs

- New Orleans' Office of Environmental Health – New Orleans Childhood Lead Poisoning Prevention Program (NOCLPPP): Monitors blood testing of children throughout the city by private medical facilities and City health clinics. Elevated childhood blood levels trigger education, remediation, medical intervention, and/or medical monitoring.

- New Orleans Department of Housing and Neighborhood Development (DHND) – Neighborhood 1 – NO LEAD Program: Qualifying low to moderate income families with a child under age 6 who tests positive for lead poisoning can have lead hazards removed at no cost to the resident/homeowner.

This program currently has limited-duration funding.

- Louisiana Department of Environmental Quality (LDEQ): Provides regulatory oversight of site evaluation and remediation; assists the public in understanding and participating in the regulatory process through outreach and education.

- Louisiana CLPPP: Statewide monitoring of blood lead levels in young children, care coordination for children with elevated blood lead concentrations, environmental inspections, and community and professional education on childhood lead poisoning.

- Tulane Center for Applied Environmental Public Health: Provides

epidemiological support to LACLPPP for surveillance and analysis of data, Health Education, physician/health care provider education, and community-based research and education.

- Louisiana Office of Environmental Health – Department of Health and Hospitals (DHH) – Section of Environmental Epidemiology and Toxicology (SEET): Environmental health research, public health education, occupational health surveillance, and other programs.

- Louisiana Office of Environmental Health– DHH–SEET–Adult Blood Lead Poisoning: Health education materials for adults, and information for health care providers on the treatment of adult lead poisoning.

Environmental Outreach and Justice

REVIVING PRE-KATRINA ENVIRONMENTAL PROGRAMS

In addition to reviving recycling programs that existed prior to Hurricane Katrina, the City will identify and evaluate other pre-Katrina environmental programs for possible reimplementation, as appropriate.

INTER-AGENCY COLLABORATION and CAPACITY-BUILDING

Existing City agencies that have a stake in environmental issues can expand their impact and reach, and make the most productive use of limited funding, by working cooperatively on projects, programs, public service announcement campaigns, and community outreach and education.

Joint program planning can avoid duplication of efforts, and can further ensure that gaps in the existing programs are filled most effectively. Teamwork between agencies will result in increased capacity to inform citizens and obtain positive effects over a wider range of the community.

To effect greater collaboration between governmental agencies, the City's Office of Environmental Affairs will host quarterly stakeholders' meetings between environmental-related City departments, and appropriate Parish and State agencies to discuss current and proposed programs, funding opportunities, and sharing of resources.

In addition, the Office of Environmental Affairs

may host periodic round-table discussions for local non-profit groups, NGOs, businesses and business leaders, neighborhood associations, and community groups, to ensure that the City is maintaining an open line of two-way communication with the community stakeholders.

UTILIZING THE VOLUNTEER BASE

Already an integral contributor to the City's recovery process, the extensive volunteer base in New Orleans will also be an invaluable resource for the City's future green growth. New Orleans is home to over 300 non-profit community-based organizations, many of which are funded through the federal AmeriCorps program.

Such programs vastly increase the social capital of our city and foster a culture of social responsibility, grassroots organization, and community investment.

Sustainable Partnerships and Green Project Scoping

Over the next year, the City will be developing a series of green projects designed specifically for implementation by volunteers. The City is interested in creating sustainable partnerships with local non-profit organizations who are invested in environmental conservation and remediation. These organizations will be responsible for engaging staff and volunteers to execute assigned green projects, and providing trainings where

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appropriate. The primary objectives of these partnerships are:

- To engage organizations in important service projects that will contribute to the long term environmental sustainability of New Orleans;
- To provide continuous green skills training opportunities for the City's future green workforce;
- To build city-wide capacity to execute green projects; and
- To spread environmental awareness and concern throughout the community.

Secondary objectives for these partnerships include creating a more permanent culture of volunteerism and

citizen responsibility, maintaining solid connections between city government and the New Orleans community, and institutionalizing environmental awareness and action as an essential component of New Orleans living.

Lessons Learned

-Utilizing the New Orleans volunteer base both bolsters the profile and capacity of the participating organizations and improves the financial and time efficiency with which projects can be completed across the City.

-Engaging youth in green projects creates interest in and training for the green workforce, which is already a significant and growing sector of our nation's economy.

-Volunteer participation fosters a culture of citizen service and social responsibility, both of which are critical for the future of green growth and community re-development in New Orleans.

Environmental Non-Profit Organizations in New Orleans

- Louisiana Green Corps
- Global Green
- Parkway Partners
- New Orleans Food and Farm Network
- Deep South Center for Environmental Justice
- Replant New Orleans
- LA Bucket Brigade
- Holy Cross Neighborhood Association
- HEAL
- Association of Community Organizations for

Reform Now (ACORN)

- Groundwork New Orleans
- People's Environmental Center
- Common Ground

PUBLIC OUTREACH

Among the biggest challenges to environmental sustainability in New Orleans is adequate public outreach and education regarding new or existing programs and completed recovery projects. It is critical for the success of any program, new or existing, that the general public be sufficiently informed of program benefits and processes. Public awareness can be enhanced through targeted media campaigns, public workshops, and educational outreach in

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schools and at community events.

To accomplish the goal of greater community and citizen awareness regarding existing and/or new environmental programs, the City seeks to develop a comprehensive public outreach and media campaign strategy for possible launch in late 2009.

After surveying regional and national green campaign models, the City intends to adopt a publicity strategy characterized by three critical elements:

- High Visibility
- Practicality
- Public Appeal

The overall strategy is expected to include publicity on completed projects, the promotion of new and existing programs, and a

continuous public outreach campaign to encourage daily environmentally conscious (“green”) habits such as recycling and energy conservation.

Targeted Media Campaigns

A successful environmental campaign in New Orleans must focus on bringing “green” into the daily consciousness of our residents of all ages. Although the recovery process is an enormous opportunity for sustainable rebuilding and insituting green practices, many New Orleanians do not list environmental preservation among their top priorities as they rebuild their lives in the city.

In order to establish “green” as a priority, the City seeks to

develop a series of targeted media campaigns that promote green practices in a way that will caputre the interest and commitment of the target audiences. In these campaigns, green practices will be tailored to compliment the specific needs of different audiences, such that they become rewarding conveniences rather than chores. As a critical part of campaign development, the City will research various post-Katrina needs assessment surveys conducted in communities across New Orleans, and will conduct its own focus groups to ensure that each campaign will be effective.

Public Workshops

Residents who desire to “go green” in post-Katrina New Orleans

face limited accessible educational resources that are designed to teach “environmental best practices” and viable options for transitioning to eco-friendly living. One component of the City’s public outreach campaign will be hosting a series of public workshops to inform residents about various household and community strategies to improve the overall environmental quality of their lives. The City will enlist the support and assistance of local organizations that have a variety of expertise, ranging from waste management, to Healthy Homes training, to soil remediation.

Environmentally Conscious Education in Schools

Perhaps the most important asset to greening our City is our

youth. Accordingly, a vital aspect of the City's public outreach strategy will be to encourage a broad green curriculum in schools across New Orleans. The City will work towards encouraging schools throughout the parish to institute green practices in school yards, in cafeterias, and in classrooms.

Lessons Learned

-Successful campaigns must include targeted media that is highly visible, practical, and appealing to the audience.

-Educational outreach for adults (community programs) and youth (through schools) is critical for institutionalizing eco-friendly practices across the City.

ENVIRONMENTAL PLANNING

Over the next 3-5 years, the City of New Orleans seeks to develop a 10-year and 20-year Environmental Health and Justice Plan. Long-term goals include the drafting and promulgation of sound environmental legislation that will promote and enable a sustainable, healthy environment for all residents of New Orleans.

To achieve this goal and to develop the plan, environmental programs and legislation throughout the Gulf Coast region and in select "green" cities throughout the country will be reviewed and considered for City adoption.

Environmental Outreach and Justice

SHORT-TERM

- Further develop community-focused Lead (Pb) remediation and/or mitigation program(s).
- Strengthen collaboration between existing City-wide Lead (Pb) programs.
- Identify and evaluate any additional pre-Katrina City environmental programs for possible reimplementation.
- Create a City-wide public outreach and media campaign.
- Green Project scoping for City's community volunteer base.

MEDIUM-TERM

- Continued implementation of community-focused Lead (Pb) remediation /mitigation program(s).
- Partner with City-wide Lead (Pb) programs for grant applications and other funding sources when appropriate.
- Revive the City's pre-Katrina environmental programs as appropriate.
- Launch a City-wide public outreach and media campaign.
- Effectively engage the City's community volunteer base for scoped Green Projects.
- Enhance the City's capacity to implement Environmental Programs.
- Visit and research other Green cities to develop NOLA's long-term environmental goals and plan of action.

LONG-TERM

- Reduce the incidence of childhood blood Lead (Pb) poisoning.
- Obtain long-term and/or permanent funding for continued Lead (Pb) remediation.
- Promote and encourage educational and outreach programs that broaden environmental awareness among all citizens.
- Draft and promote legislation that ensures a Green NOLA for our future.
- Strive for environmental programs that facilitate Environmental Justice.
- Draft a 10-year and 20-year plan for the Greening of NOLA.

Coastal Restoration

Introduction

Restoring the Coastal areas of Orleans Parish is one of the key components of the recovery efforts. It is critical as recover that we effectively manage the existing coastal wetlands areas and restore areas that provide habitat and infrastructure protection. This will be done through the approved local coastal management program which has been and continues to be approved by the secretary of the Department of Natural Resources. A variety of techniques will be used to protect, mitigate and restore our coast.

The primary mission of the program is to ensure that coastal areas and habitat in Orleans Parish are conserved for future generations.

The City of New Orleans will become a national model for coastal restoration practices and expand New Orleans' coastal restoration economic sector – create jobs in engineering, horticulture, environmental planning, wetland science, manufacturing, dredging and project management.

Coastal Contributions

The Orleans Parish coast is a vital contributor to the local economy and the state's commercial fisheries. The economic impact of commercial fishing in our area was over \$43,000,000. The

impact that wetland loss will have on the commercial fishing industry in Orleans Parish could be catastrophic. It employed about 300-400 people, many of which were independent businessmen who multiplied the economic impact of their revenues with supplies, repairs, fuel and personal consumption. We will support the input from the community regarding the District 11 UNOP plan. This plan will maintain and enhance a sustainable coastal community.

Lessons Learned

Hurricane Katrina left her mark on Southeastern Louisiana by removing 47 square miles of marsh throughout the Pontchartrain, Pearl River, Barataria, and Terrebonne basins.

This created open water areas in places that once contained wetlands. Areas of the Orleans Land Bridge to include Grand Coin Pocket were visibly decimated due to the storm surge.



The Orleans Land Bridge separates Lake Pontchartrain and Lake Borgne in southeast Louisiana. These wetlands form a land bridge that separates Lake Borgne from Lake Pontchartrain and maintains the physical integrity of these two water bodies. If action

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is not taken, the bridge will disintegrate, opening the wetlands to even more high-energy winds and waves that would ultimately advance wetland loss and increase flooding problems. These wetlands are also important migration grounds for pelicans and ducks, and they support fisheries, a viable economic resource for our city. The area forms an important “speed bump” and has been identified as a critical feature in terms of wetlands and storm protection.

Best Practices

A variety of technologies have been used to combat loss of barrier islands and wetlands along the Louisiana coast. The Multiple Lines of Defense (MLOD) Strategy combines

traditional flood protection and wetland restoration into one program. This strategy was developed by experts in the fields of coastal restoration, habitat protection, and engineering.

Costs and Benefits

“...Louisiana's 3 million acres of wetlands are lost at the rate about 75 square kilometers annually, but reducing these losses is proving to be difficult and costly. “ “...For the typical residential structure, an average of 1,000 square feet of each inundated residential structure was gutted following Hurricane Katrina. Based on interviews with contractors, the cost of gutting a residential structure ranged from \$2.98 per square foot to \$6.43 per square foot with an average value of \$4.20

per square foot. This results in a cost of \$4,200 for each household at risk.”

Federal and state grants will pay the majority of the cost for restoring the coastal areas of Orleans Parish. The parish conducts two wetland plantings a year and manages the Christmas tree recycling program.

The state funded programs allow the local citizenry to participate in the restoration process by volunteering for



planting projects while the federal grants give the parish the funding needed to pay for large scale projects.

The City of New Orleans received a CWPRA award in the amount of 19.6 million dollars to restore marsh and stabilize shoreline around Alligator Bend. The project will create and or protect approximately 330 acres of marsh over the life of the project. The city does not have to provide a match and all work will be done by the federal partner.

The city will also receive \$15M over the next four years through the Coastal Impact Assistance Program (CIAP). The money will be used to restore marsh and stabilize the shoreline from Alligator Point to Bayou Bienvenue. The state

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has agreed to partner with the city and will provide technical expertise (Engineering and Design) and \$27.2 million in financial contributions.

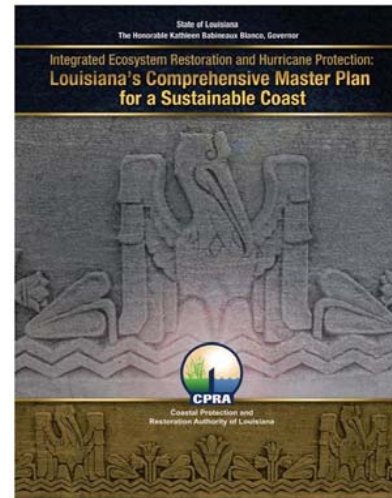
While there are many direct benefits to restoring wetlands and stabilizing the coastline, to include reduction in storm surge, habitat creation and job creation; the indirect impacts are important too. Those impacts include eco-tourism industry, commercial fishing and the potential development of a new business sector.

State Master Plan

The State of Louisiana developed a Master Plan for Coastal Restoration and Hurricane Protection at the request of Governor Blanco (through Act 8). The plan was developed with input from local,

state, and federal stakeholders and with assistance from the following state agencies:

- Department of Natural Resources
- Department of Transportation and Development
- Department of Wildlife and Fisheries
- Department of Environmental Quality
- Department of Economic Development
- Department of Agriculture and Forestry
- Louisiana Division of Administration
- Governor's Office for Homeland Security and Emergency Preparedness
- Department of Insurance)



The plan was developed around four objectives:

1. Reduce economic losses from storm based flooding to residential, public, industrial, and commercial infrastructure, assuring that assets are protected, at a minimum, from a storm surge that has a 1% chance of occurring in any given year;

2. Promote a sustainable coastal ecosystem by harnessing the processes of the natural system;
3. Provide habitats suitable to support an array of commercial and recreational activities coast-wide;
4. Sustain, to the extent practicable, the unique heritage of coastal Louisiana by protecting historic properties and traditional living cultures and their ties and relationships to the natural environment.

The City of New Orleans is part of Planning Unit 1 in the Plan. The plan had bi-partisan support and was approved by the State legislature on May 30, 2007.

Flood Risk Reduction

City Plans

Every Parish located in the Coastal Zone of Louisiana should have a Master Plan that addresses coastal restoration. These plans should consider land-use change scenarios that are consistent with greenhouse gas emissions and land subsidence.

Additionally these plans should summarize the status of environmental restoration and protection projects relevant to each Parish, including projects that have been proposed, approved and funded, under construction and/or implemented. The plans should include an analysis of the environmental setting, principal resources, socio-economic factors, and environmental impacts. The plans should be

implemented through zoning regulations.

In order to protect citizens from future storm events, the City of New Orleans should prepare an analysis of environmental conditions in Orleans Parish and review the actions being proposed to address these conditions. This analysis should utilize data from CIAP-approved projects, and from projects identified in the State of Louisiana and USACE coastal restoration plans. The projects proposed in these plans should be compared to the proposed levee alignments.

Wetlands Nursery

Through the state's wetlands restoration program, Orleans parish has restored several acres of marsh in Bayou Sauvage National

Wildlife Refuge and City Park. These community outreach projects have been conducted in the past with the assistance of Common Ground, students from Booker T Washington High School, LSU Ag Center, Fish and Wildlife Service, Bayou Land RC&D and concerned citizens.

Prior to each planting event, the city purchases plants from state approved vendors outside of Orleans Parish. Given the magnitude of the restoration efforts Post-Katrina, the parish will work with various stakeholders to establish a wetlands nursery in the parish.

This nursery will provide job opportunities and a steady stream of plants for future projects. The

location of the project is yet to be determined.

Restoration

A regional coastal restoration program should be established in partnership with neighboring parishes. Restoring the coastal areas of Orleans Parish is important to the citizens of Orleans Parish, but to truly protect the assets of the Parish we must begin to think regionally.

New Orleans should be proactive and begin a dialogue with neighboring parishes to develop projects that benefit several parishes. We can no longer afford to take a myopic view of restoration but must understand the importance of rebuilding and stabilizing areas closest to the Gulf of Mexico.

Flood Risk Reduction

Education

A wetlands research and education center is being established. The facility is located in Orleans Parish at Chef Pass, and is being remodeled and upgraded for use by students, faculty and local schools. The facility will have three components: wetlands and estuarine research, K-12 educational programs and vocational technology components to support the commercial fishing industries.

Stewardship

Establish a coastal stewardship program that consists of a network of volunteers and businesses who work together to improve the quality of the coast through service projects that protect habitat, restore

wetlands, and preserve the coast

The parish will work with other stakeholders to encourage CWPPRA stakeholders to include points for projects that assist more than one parish.

INDICATORS

Indicators of progress in coastal restoration include:

- New miles of shoreline added
- New acres of wetlands created
- Increase in wetland habitat
- Reduction in rates of erosion

EXISTING LOCAL PROJECTS

- Christmas Tree Recycling
- UNO/PIES
- Coastal Roots
- Wetlands in the Classroom
- Wetland Nurseries at local schools



LOCAL PARTNERS

- U.S. Army Corps of Engineers
- L.S.U. Agricultural Center
- Natural Resources Conservation Service
- University of New Orleans (PIES)
- Coalition to Restore Coastal Louisiana
- Mississippi River Basin Alliance
- Lake Catherine Civic Association
- Sewerage and Water Board of New Orleans
- Department of Natural Resources
- Lake Pontchartrain Basin Foundation
- Coastal Environment Incorporated

Flood Risk Reduction

SHORT TERM

- Xmas Tree Recycling Event
- Develop CWPPRA projects that are complimentary to State's Plan
- Council Resolution acknowledging the Orleans Parish Coastal Advisory Board.
- Conduct coastal use permit workshop
- Provide wetlands education opportunities to teachers, children and youth groups
- Conduct public workshops to educate citizens about restoration efforts and opportunities
- Work with Ernest Just Academy at Dartmouth College to assist the department with a No Wetlands/No Seafood campaign.

MEDIUM TERM

- Work with local stakeholders to develop a wetland nursery that will serve as a training tool for local entrepreneurs and provide plant materials for Orleans Parish.
- Support the creation and development of a Wetlands Education Center in Orleans Parish.
- Work with Ernest Just Academy at Dartmouth College to assist the department with developing an implementation strategy that examines the relationships between the environment and economic development.

LONG TERM

- Work with PACE members to develop regional CWPPRA projects.
- Develop a Public Awareness Campaign around the importance of regional planning.
- Develop a carbon mitigation bank in the Parish.

Hazard Mitigation

Introduction

New Orleans faces a combination of factors that compound the city's overall flood risk, including land subsidence, coastal erosion, rising sea level, inadequate drainage capacity, potential levee failure, and stronger and more frequent storm activity involving intense rainfall and/or storm surge. A comprehensive non-structural hazard mitigation strategy is needed to address this emerging risk profile. The term "non-structural" differentiates secondary flood mitigation measures from the primary "structural" protection provided by the federal

system of levees, floodwalls, pumps, and gates that allowed New Orleans to grow to its current extent within the Mississippi River floodplain. A non-structural mitigation strategy would further reduce the risk of flooding beyond the risk reduction provided by the levee system and beyond the risk reduction provided by enhanced coastal protection.

Urban planning decisions, building standards enforcement, flood plain management practices, and emergency preparedness activities all have enormous impacts on risk exposure and on actual damages to life and property. These decisions and actions are made directly by the officials, businesses, and citizens of New

Orleans. One of the positive outcomes of the catastrophic levee failure in New Orleans is that the stage was set for strengthening these areas and for incorporating mitigation into the city's rebuilding and recovery process.

New Orleans is in a unique position to serve as a national model of how to plan for both frequent hazards and catastrophic disasters, and to demonstrate its ability to protect the investments being made by taxpayers in the recovery of New Orleans. After Katrina, the City established a new Disaster Mitigation Office. The role of the Mitigation Office is to provide technical expertise and programmatic leadership to encourage the development and articulation of a citywide mitigation

program. This means an ongoing search for mitigation resources, assessment of current practices, definition of program objectives and subject areas where additional effort should be focused, identification of global best practices applicable to New Orleans, and implementation of funded programs and projects.

Without a formal mitigation unit, the City would not be able to seize the opportunities that are available for minimizing flood risk to the lowest extent feasible. The City's Disaster Mitigation Office is currently administering a \$60 million citywide mitigation program.

Flood Risk Reduction

Existing Local Programs

- Hazard Mitigation Grant Program – elevation and/or reconstruction of damaged properties and hardening of critical infrastructure
- Severe Repetitive Loss Program – elevation and/or reconstruction of the most at-risk properties in the city
- Pre-Disaster Mitigation Program – updating of the City's Hazard Mitigation Plan
- Pilot Planning Grant Program – scoping and preliminary identification of mitigation projects
- LRA Road Home Elevation Grant
- LRA State Elevation Grant
- FEMA/NFIP Increased Cost of Compliance Elevation Grant

Lessons Learned

The City's first Hazard Mitigation Plan was prepared in December 2005 and approved by FEMA in March 2006. The plan allowed the City to maintain its eligibility for FEMA funding, and provided guidance on the direction of priority mitigation projects.

The lessons learned from the first plan are that the City needs to better incorporate non-structural mitigation policy and practice into its long term urban development policy. Mitigation programs must be integrated with flood plain management and emergency preparedness. The steps for doing this are to articulate the City's mitigation policy in an update of the Hazard Mitigation Plan; to link and incorporate the new plan into the City's

Master Plan, Zoning Ordinance, and Municipal Code; and to implement mitigation projects that reflect the risk reduction principles and standards identified in the plan.

Best Practices

Even after the Corps achieves the 100-year levee protection (estimated to be completed in 2011), many areas of New Orleans will continue to experience unacceptable levels of residual risk as documented in the Army Corps' IPET Risk and Reliability Study. Consequently, it is critical that the City take the lead in establishing a non-structural flood mitigation policy and identify funds to support mitigation programs.

The City proposes to install a series of pilot projects to demonstrate the available mitigation options that would be effective for New Orleans. These projects are being proposed in partnership with the US Army Corps via the Corps' Louisiana Coastal Protection and Restoration Study (LaCPR), the final draft of which will be presented to Congress in December 2008. These projects will also be guided by the State of Louisiana Hazard Mitigation Plan, which was finalized in April 2008.

In developing non-structural mitigation demonstration projects, the City will prioritize projects located in Target Recovery Areas identified in the City's recovery plan, projects located in areas with a high or medium residual

risk of flooding to maximize the benefit of investing in mitigation, and projects that facilitate the creation of clustered communities and that keep neighborhoods intact. Five types of non-structural mitigation will be demonstrated:

- **Voluntary Property Buyouts and Relocation to New Elevated Structures.** This option involves buying out homeowners located in a low-lying, high risk areas and offering them new elevated homes elsewhere in the same or adjacent neighborhood. The cost of the buyout and the cost of providing mitigated housing would be covered by the project. For an existing urban area like New Orleans, the bought out property must be able to be

redeveloped appropriately.

- **Elevation of Structures in Place.** Existing homes or commercial structures would be elevated on their existing site. To qualify for this option the site can be at more than medium risk, where relocation is not required but mitigation is still achieved. Higher risk sites will require relocation because structures cannot be elevated above the maximum 12-15 feet. For most structures, elevations of this height would be undesirable for functional reasons.
- **Secondary Levees/Floodwalls.** This option involves the construction of small secondary levees or floodwalls, up to 6 feet around

critical public facilities or commercial facilities.

- **Dry Flood Proofing of Commercial Facilities.** In this option waterproof walls up to 4 feet in height would be installed on the surface of the existing external walls of a commercial structure. To qualify for this mitigation method the structure must be located in an area that has not received more than 2-3 feet of flooding.
- **Hardening of Critical Facilities.** Critical facilities would be retrofitted to increase their operability during a typical flood event. Changes would include: elevating pumps, generators, electrical wiring, and other critical

equipment above a structures flood zone; moving operations above the first floor.

Indicators

Examples of indicators are:

- Increase in the number of properties mitigated
- Reduction in the number of repetitive loss structures in the City
- Increase in the number of structures covered by flood insurance coverage
- Reductions in the loss of life and property damage following severe flood events
- Higher flood insurance discounts associated with the City's participation in the Community Rating System
- Higher levels of flood protection beyond the minimum 100-year level

LOCAL PARTNERS

- U.S. Army Corps of Engineers
- Federal Emergency Management Agency
- Governor's Office of Homeland Security and Emergency Preparedness
- University of New Orleans Hazards Center (CHART)
- Louisiana State University Hurricane Center
- Sewerage and Water Board of New Orleans
- New Orleans Redevelopment Authority
- Department of Public Works

Flood Risk Reduction

SHORT TERM

- Maximize Existing Funding Sources – New program expansion to include administration of FEMA-funded programs (e.g., PDM, PPGP, SRL, FMA, etc.).
- Build Institutional Capacity – Establish a Disaster Mitigation Unit with adequate staff and resources within the City's Office of Homeland Security and Emergency Preparedness.
- Integrate – Establish effective working relationships and partnerships with the directors of emergency preparedness, floodplain management, and neighborhood drainage.

MEDIUM TERM

- Improve Government Performance – Better government performance through state-of-the-art contracts, better procurement procedures, use of construction monitoring, enhanced fiscal monitoring, and formal records management.
- Formalize Mitigation Policy – Formal written policies and plans with the force of law (through linkage to the City's Master Plan and Zoning Ordinance) that shift decision-making to a risk-based development paradigm.
- Expand New Sources of Program Funding – Engage the philanthropic sector in flood protection

LONG TERM

- Achieve Legitimacy – A permanent mitigation office with adequate staff and resources, including both disaster-based and non-disaster based funding to reduce flood risk permanently.
- Demonstrate Effectiveness – Integrated structural and non-structural mitigation practices, coastal restoration, floodplain management, and emergency preparedness as the Citywide strategy for hazard resilient urban development
- National Model – New Orleans as the national leader in risk reduction.